

PLUS SEARCH

Butler, Douglas

From: PLUS
Sent: Wednesday, March 03, 2004 9:10 AM
To: Butler, Douglas
Subject: PLUS Results for 10630158

Here are the PLUS search results for 10630158.

This search was prepared by the staff of the Scientific and Technical Information Center, SIRA. If you have questions or comments about this search, please reply via email to PLUS@uspto.gov.



10630158_QUAL.txt



10630158_LIST.txt



10630158_WEST.txt



10630158_EAST.txt



10630158.east



10630158_CLS.txt



10630158_CLSTITLES.t



10630158_WDS.txt

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10630158_LIST

PLUS Search Results for S/N 10630158, Searched March 03, 2004

The Patent Linguistics Utility System (PLUS) is a USPTO automated search system for U.S. Patents from 1971 to the present. PLUS is a query-by-example search system which produces a list of patents that are most closely related linguistically to the application searched. This search was prepared by the staff of the Scientific and Technical Information Center, SIRA.

4406597	4269082	3697199
4456060	4273520	3643432
4483662	4284943	3635081
4526048	4400141	3912420
4545737	4490094	3889579
4346620	4949784	3802802
4354395	4993448	4047384
5509475	5209495	4049365
4390321	5275540	4157117
4501119	5382142	4171185
4461187	5472326	4099571
5441389	5593289	4114375
4445674	5678981	4243361
5735170	5771968	4257751
4176714	5934303	4262742
4354397	6105671	4267888
4375946	6182751	4285401
4571162	4286928	4286656
4963078	4392792	4289294
5018350	4401396	4296678
5230607	4406122	4297088
5281109	4512149	4297087
5309992	4546607	4299545
5409356	4552220	4305461
5549156	4572012	4306463
6446946	4781543	RE31016
6481987	4781547	4315699
5567138	4788873	4320799
5586602	4790376	4329124
6015010	4876018	4350080
4631954	RE33163	4350478
4571939	4919560	4353445
4997037	5006044	4355307
4414808	5222867	4360320
5826862	5284422	4362478
5062616	5404767	4366861
5857665	5406482	4368909
5362206	5407333	4373873
4490095	5511619	4380150
4540348	5589633	4383803
4565496	5782608	4390326
4935685	5819849	4393927
5423224	5820350	4395204
4406561	5831353	4401159
4500224	5868029	4403884
4538339	5941305	4403919
4570718	RE36362	4411546
5224834	6041856	4416329
5246076	6152223	4418609
5620048	3706234	4431052

10630158_CLS
Most Frequently Occurring Classifications of Patents Returned
From A Search of 10630158 on March 03, 2004

Original Classifications

6	60/372
6	74/41
6	417/12
5	166/369
5	166/68
5	166/68.5
5	417/554
3	267/64.17
3	417/378
3	417/53
2	137/13
2	166/105
2	166/249
2	166/53
2	403/343
2	417/18
2	417/42
2	417/434
2	417/444
2	417/454
2	417/46
2	417/545

Cross-Reference Classifications

11	417/53
9	74/41
9	417/18
8	417/554
7	166/68
6	417/390
6	417/904
5	60/372
5	92/137
5	166/105
5	417/63
4	74/110
4	166/72
4	417/399
3	60/381
3	60/414
3	74/581
3	74/583
3	91/275
3	166/53
3	166/68.5
3	417/44.1
2	60/369
2	60/416
2	60/476
2	73/168
2	74/108
2	91/218
2	138/140
2	166/105.5

2 166/106
2 166/112
2 166/176
2 166/177.1
2 166/177.2
2 166/242.1
2 166/369
2 166/371
2 166/66.4
2 173/189
2 267/125
2 267/153
2 280/764.1
2 403/284
2 403/361
2 417/12
2 417/15
2 417/212
2 417/223
2 417/313
2 417/36
2 417/38
2 417/392
2 417/401
2 417/402
2 417/415
2 417/417
2 417/43
2 417/430
2 417/431
2 417/44.11
2 417/45
2 417/478
2 417/514
2 417/520
2 417/552
2 417/555.2
2 417/567
2 417/569

Combined Classifications

15 74/41
14 417/53
13 417/554
12 166/68
11 60/372
11 417/18
8 166/68.5
8 417/12
7 166/105
7 166/369
7 417/390
6 417/63
6 417/904
5 92/137
5 166/53
5 166/72
5 417/399
4 74/110

4 74/583
4 91/275
3 60/369
3 60/381
3 60/414
3 74/108
3 74/581
3 137/13
3 166/105.5
3 166/112
3 267/64.17
3 403/284
3 403/343
3 403/361
3 417/15
3 417/378
3 417/401
3 417/417
3 417/43
3 417/434
3 417/44.1
3 417/444
3 417/45
3 417/514
3 417/545
2 60/371
2 60/416
2 60/476
2 73/152.61
2 73/168
2 91/218
2 138/140
2 166/106
2 166/176
2 166/177.1
2 166/177.2
2 166/242.1
2 166/249
2 166/311
2 166/312
2 166/371
2 166/385
2 166/66.4
2 173/189
2 267/125
2 267/141
2 267/153
2 280/764.1
2 318/806
2 403/13
2 403/268
2 417/212
2 417/223
2 417/313
2 417/36
2 417/38
2 417/392
2 417/394
2 417/400

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2 417/402
2 417/404
2 417/410.1
2 417/415
2 417/42
2 417/430
2 417/431
2 417/44.11
2 417/454
2 417/46
2 417/478
2 417/520
2 417/552
2 417/555.2
2 417/567
2 417/569
2 418/48
2 507/205

10630158_CLSTITLES

Titles of Most Frequently Occurring Classifications of Patents Returned
From A Search of 10630158 on March 03, 2004

- 15 74/41 (6 OR, 9 XR)
 Class 074 : MACHINE ELEMENT OR MECHANISM
 74/840 ROTARY DRIVEN DEVICE ADJUSTABLE DURING
 OPERATION RELATIVE TO ITS SUPPORTING STRUCTURE
 74/25 .Rotary to or from reciprocating or oscillating
 74/40 ..Crank, pitman, lever, and slide
 74/41 ...Pump jack type
- 14 417/53 (3 OR, 11 XR)
 Class 417 : PUMPS
 417/53 PROCESSES
- 13 417/554 (5 OR, 8 XR)
 Class 417 : PUMPS
 417/437 EXPANSIBLE CHAMBER TYPE
 417/545 .Valved piston
 417/552 ..Reciprocating
 417/554 ...Ball type
- 12 166/68 (5 OR, 7 XR)
 Class 166 : WELLS
 166/67 WITH BELOW AND ABOVE GROUND MODIFICATION
 166/68 .Eduction pump or plunger in well
- 11 60/372 (6 OR, 5 XR)
 Class 060 : POWER PLANTS
 60/325 PRESSURE FLUID SOURCE AND MOTOR
 60/369 .Cyclically operable reciprocating or
 oscillating motor or output stroke device
 60/371 ..Having means to store and release energy
 usable to energize motor work output means
 60/372 ...Pneumatic counter-balance of gravity load on
 motor (e.g., deep well pump rod, etc.)
- 11 417/18 (2 OR, 9 XR)
 Class 417 : PUMPS
 417/1 CONDITION RESPONSIVE CONTROL OF PUMP DRIVE
 MOTOR
 417/18 .Single motor control element responsive to
 means sensing diverse conditions
- 8 166/68.5 (5 OR, 3 XR)
 Class 166 : WELLS
 166/67 WITH BELOW AND ABOVE GROUND MODIFICATION
 166/68 .Eduction pump or plunger in well
 166/68.5 ..With above ground (1) motor carried by casing
 or casing support or (2) well fluid pump
- 8 417/12 (6 OR, 2 XR)
 Class 417 : PUMPS
 417/1 CONDITION RESPONSIVE CONTROL OF PUMP DRIVE
 MOTOR
 417/12 .Having timer or delay means

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- 7 166/105 (2 OR, 5 XR)
 Class 166 : WELLS
 166/105 WITH EDUCTION PUMP OR PLUNGER
- 7 166/369 (5 OR, 2 XR)
 Class 166 : WELLS
 166/244.1 PROCESSES
 166/369 .Producing the well
- 7 417/390 (1 OR, 6 XR)
 Class 417 : PUMPS
 417/321 MOTOR DRIVEN
 417/375 .Fluid motor
 417/379 ..With motive fluid generator
 417/390 ...Fluid pump
- 6 417/63 (1 OR, 5 XR)
 Class 417 : PUMPS
 417/63 WITH SIGNAL, INDICATOR, OR INSPECTION MEANS
- 6 417/904 (0 OR, 6 XR)
 Class 417 : PUMPS
 417/904 WELL PUMP DRIVEN BY FLUID MOTOR MOUNTED ABOVE
 GROUND
- 5 92/137 (0 OR, 5 XR)
 Class 092 : EXPANSIBLE CHAMBER DEVICES
 92/137 WITH FLEXIBLE TRANSMISSION ELEMENT SECURED TO
 WORKING MEMBER
- 5 166/53 (2 OR, 3 XR)
 Class 166 : WELLS
 166/53 AUTOMATIC
- 5 166/72 (1 OR, 4 XR)
 Class 166 : WELLS
 166/67 WITH BELOW AND ABOVE GROUND MODIFICATION
 166/72 .Above ground actuating means for below ground
 device
- 5 417/399 (1 OR, 4 XR)
 Class 417 : PUMPS
 417/321 MOTOR DRIVEN
 417/375 .Fluid motor
 417/398 ..Rectilinearly reciprocating cylinder and
 piston-type motor
 417/399 ...Rectilinearly reciprocating cylinder and
 piston-type pump
- 4 74/110 (0 OR, 4 XR)
 Class 074 : MACHINE ELEMENT OR MECHANISM
 74/840 ROTARY DRIVEN DEVICE ADJUSTABLE DURING
 OPERATION RELATIVE TO ITS SUPPORTING STRUCTURE
 74/110 .Reciprocating to reciprocating
- 4 74/583 (1 OR, 3 XR)
 Class 074 : MACHINE ELEMENT OR MECHANISM
 74/469 CONTROL LEVER AND LINKAGE SYSTEMS
 74/579R .Pitmans and connecting rods

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- 74/581 ..Yieldable
74/583 ...Fluid cushion
- 4 91/275 (1 OR, 3 XR)
Class 091 : MOTORS: EXPANSIBLE CHAMBER TYPE
91/218 CYCLICALLY OPERABLE
91/275 .Electrically or magnetically actuated or
adjusted distributor (459)
- 3 60/369 (1 OR, 2 XR)
Class 060 : POWER PLANTS
60/325 PRESSURE FLUID SOURCE AND MOTOR
60/369 .Cyclically operable reciprocating or
oscillating motor or output stroke device
- 3 60/381 (0 OR, 3 XR)
Class 060 : POWER PLANTS
60/325 PRESSURE FLUID SOURCE AND MOTOR
60/369 .Cyclically operable reciprocating or
oscillating motor or output stroke device
60/381 ..Having condition responsive control of
variable displacement pump
- 3 60/414 (0 OR, 3 XR)
Class 060 : POWER PLANTS
60/325 PRESSURE FLUID SOURCE AND MOTOR
60/413 .With control means for structure storing work
driving energy (e.g., accumulator, etc.)
60/414 ..Energy of braking or of reversed load on
motor stored
- 3 74/108 (1 OR, 2 XR)
Class 074 : MACHINE ELEMENT OR MECHANISM
74/840 ROTARY DRIVEN DEVICE ADJUSTABLE DURING
OPERATION RELATIVE TO ITS SUPPORTING STRUCTURE
74/99R .Reciprocating to or from oscillating
74/102 ..Lever and slide
74/108 ...Flexible connections
- 3 74/581 (0 OR, 3 XR)
Class 074 : MACHINE ELEMENT OR MECHANISM
74/469 CONTROL LEVER AND LINKAGE SYSTEMS
74/579R .Pitmans and connecting rods
74/581 ..Yieldable
- 3 137/13 (2 OR, 1 XR)
Class 137 : FLUID HANDLING
137/1 PROCESSES
137/13 .Affecting flow by the addition of material or
energy
- 3 166/105.5 (1 OR, 2 XR)
Class 166 : WELLS
166/105 WITH EDUCTION PUMP OR PLUNGER
166/105.5 .Having liquid-gas separator
- 3 166/112 (1 OR, 2 XR)
Class 166 : WELLS
166/105 WITH EDUCTION PUMP OR PLUNGER

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- 166/112 .With leak means
- 3 267/64.17 (3 OR, 0 XR)
 Class 267 : SPRING DEVICES
 267/2 VEHICLE
 267/64.11 .Comprising compressible fluid
 267/64.15 ..With retarder
 267/64.16 ...Leveling device
 267/64.17Self-pumping
- 3 403/284 (1 OR, 2 XR)
 Class 403 : JOINTS AND CONNECTIONS
 403/274 MEMBER DEFORMED IN SITU
 403/284 .Diverse resistance to lateral deforming force
- 3 403/343 (2 OR, 1 XR)
 Class 403 : JOINTS AND CONNECTIONS
 403/343 SCREW OR CAM
- 3 403/361 (1 OR, 2 XR)
 Class 403 : JOINTS AND CONNECTIONS
 403/345 INTERFITTED MEMBERS
 403/361 .Socket
- 3 417/15 (1 OR, 2 XR)
 Class 417 : PUMPS
 417/1 CONDITION RESPONSIVE CONTROL OF PUMP DRIVE
 MOTOR
 417/15 .With control of pump drive transmission
- 3 417/378 (3 OR, 0 XR)
 Class 417 : PUMPS
 417/321 MOTOR DRIVEN
 417/375 .Fluid motor
 417/377 ..Serial flow fluid from pumping chamber
 through motor working chamber
 417/378 ...Pulsator type
- 3 417/401 (1 OR, 2 XR)
 Class 417 : PUMPS
 417/321 MOTOR DRIVEN
 417/375 .Fluid motor
 417/398 ..Rectilinearly reciprocating cylinder and
 piston-type motor
 417/399 ...Rectilinearly reciprocating cylinder and
 piston-type pump
 417/401Integral pump and motor pistons
- 3 417/417 (1 OR, 2 XR)
 Class 417 : PUMPS
 417/321 MOTOR DRIVEN
 417/410.1 .Electric or magnetic motor
 417/415 ..Reciprocating rigid pumping member
 417/416 ...Reciprocating motor
 417/417Unitary pump and motor working member
- 3 417/43 (1 OR, 2 XR)
 Class 417 : PUMPS

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- 417/1 CONDITION RESPONSIVE CONTROL OF PUMP DRIVE
 MOTOR
- 417/43 .Responsive to change in rate of pump fluid
 flow
- 3 417/434 (2 OR, 1 XR)
 Class 417 : PUMPS
 417/434 INCLUDING SEPARATE PORT ON NONCYCLIC VALVE FOR
 DRAINING PUMP PORTION
- 3 417/44.1 (0 OR, 3 XR)
 Class 417 : PUMPS
 417/1 CONDITION RESPONSIVE CONTROL OF PUMP DRIVE
 MOTOR
 417/44.1 .By control of electric or magnetic drive motor
- 3 417/444 (2 OR, 1 XR)
 Class 417 : PUMPS
 417/437 EXPANSIBLE CHAMBER TYPE
 417/443 .Pressure responsive distributor opened
 responsive to pumping member position
 417/444 ..Distributor in piston
- 3 417/45 (1 OR, 2 XR)
 Class 417 : PUMPS
 417/1 CONDITION RESPONSIVE CONTROL OF PUMP DRIVE
 MOTOR
 417/44.1 .By control of electric or magnetic drive motor
 417/45 ..By changing electrical characteristic of
 motor or motor circuit
- 3 417/514 (1 OR, 2 XR)
 Class 417 : PUMPS
 417/437 EXPANSIBLE CHAMBER TYPE
 417/510 .Mechanically actuated distributor
 417/514 ..Distributor in piston
- 3 417/545 (2 OR, 1 XR)
 Class 417 : PUMPS
 417/437 EXPANSIBLE CHAMBER TYPE
 417/545 .Valved piston
- 2 60/371 (1 OR, 1 XR)
 Class 060 : POWER PLANTS
 60/325 PRESSURE FLUID SOURCE AND MOTOR
 60/369 .Cyclically operable reciprocating or
 oscillating motor or output stroke device
 60/371 ..Having means to store and release energy
 usable to energize motor work output means
- 2 60/416 (0 OR, 2 XR)
 Class 060 : POWER PLANTS
 60/325 PRESSURE FLUID SOURCE AND MOTOR
 60/413 .With control means for structure storing work
 driving energy (e.g., accumulator, etc.)
 60/416 ..Plural accumulators

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- 2 60/476 (0 OR, 2 XR)
 Class 060 : POWER PLANTS
 60/325 PRESSURE FLUID SOURCE AND MOTOR
 60/473 .Pump means moves motive fluid from one chamber
 to an opposite chamber of opposed expansible chambers
 having a common output
 60/476 ..Reversible delivery from pump means
- 2 73/152.61 (1 OR, 1 XR)
 Class 073 : MEASURING AND TESTING
 73/152.01 BOREHOLE OR DRILLING (E.G., DRILL LOADING
 FACTOR, DRILLING RATE, RATE OF FLUID FLOW)
 73/152.61 .Pump test
- 2 73/168 (0 OR, 2 XR)
 Class 073 : MEASURING AND TESTING
 73/168 BLOWER, PUMP, AND HYDRAULIC EQUIPMENT
- 2 91/218 (0 OR, 2 XR)
 Class 091 : MOTORS: EXPANSIBLE CHAMBER TYPE
 91/218 CYCLICALLY OPERABLE
- 2 138/140 (0 OR, 2 XR)
 Class 138 : PIPES AND TUBULAR CONDUITS
 138/140 DISTINCT LAYERS
- 2 166/106 (0 OR, 2 XR)
 Class 166 : WELLS
 166/105 WITH EDUCTION PUMP OR PLUNGER
 166/106 .With packer or plug
- 2 166/176 (0 OR, 2 XR)
 Class 166 : WELLS
 166/170 BRUSHING, SCRAPING, CUTTING OR PUNCHING-TYPE
 CLEANERS
 166/176 .On sucker rod
- 2 166/177.1 (0 OR, 2 XR)
 Class 166 : WELLS
 166/177.1 SONIC DEVICE
- 2 166/177.2 (0 OR, 2 XR)
 Class 166 : WELLS
 166/177.1 SONIC DEVICE
 166/177.2 .With specific downhole feature
- 2 166/242.1 (0 OR, 2 XR)
 Class 166 : WELLS
 166/242.1 CONDUIT WALL OR SPECIFIC CONDUIT END STRUCTURE
- 2 166/249 (2 OR, 0 XR)
 Class 166 : WELLS
 166/244.1 PROCESSES
 166/249 .Vibrating the earth or material in or being
 placed in the earth pores
- 2 166/311 (1 OR, 1 XR)
 Class 166 : WELLS

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- 166/244.1 PROCESSES
- 166/311 .Cleaning or unloading well
- 2 166/312 (1 OR, 1 XR)
 - Class 166 : WELLS
 - 166/244.1 PROCESSES
 - 166/311 .Cleaning or unloading well
 - 166/312 ..Liquid introduced from well top
- 2 166/371 (0 OR, 2 XR)
 - Class 166 : WELLS
 - 166/244.1 PROCESSES
 - 166/369 .Producing the well
 - 166/371 ..Including non-expulsive material placed in well
- 2 166/385 (1 OR, 1 XR)
 - Class 166 : WELLS
 - 166/244.1 PROCESSES
 - 166/381 .Placing or shifting well part
 - 166/385 ..Flexible cable or wire
- 2 166/66.4 (0 OR, 2 XR)
 - Class 166 : WELLS
 - 166/65.1 WITH ELECTRICAL MEANS
 - 166/66.4 .Electrical motor (e.g., solenoid actuator)
- 2 173/189 (0 OR, 2 XR)
 - Class 173 : TOOL DRIVING OR IMPACTING
 - 173/184 WITH VEHICLE SUPPORT FOR DRIVE
 - 173/186 .Nontransporting means to support vehicle during tool operation
 - 173/187 ..Adjustable nontransporting means
 - 173/189 ...Having fluid cylinder
- 2 267/125 (0 OR, 2 XR)
 - Class 267 : SPRING DEVICES
 - 267/113 FLUID
 - 267/118 .Expansible-contractible chamber device
 - 267/124 ..Piston
 - 267/125 ...For use in well drilling or operating
- 2 267/141 (1 OR, 1 XR)
 - Class 267 : SPRING DEVICES
 - 267/136 RESILIENT SHOCK OR VIBRATION ABSORBER
 - 267/141 .Nonmetallic, resilient element
- 2 267/153 (0 OR, 2 XR)
 - Class 267 : SPRING DEVICES
 - 267/153 RUBBER
- 2 280/764.1 (0 OR, 2 XR)
 - Class 280 : LAND VEHICLES
 - 280/29 WHEELED
 - 280/727 .Attachment
 - 280/762 ..Exterior
 - 280/763.1 ...Retractable prop, support, or stabilizer
 - 280/764.1With actuator for pivoted support

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- 2 318/806 (1 OR, 1 XR)
 Class 318 : ELECTRICITY: MOTIVE POWER SYSTEMS
 318/727 INDUCTION MOTOR SYSTEMS
 318/767 .Primary circuit control
 318/806 ..Condition responsive
- 2 403/13 (1 OR, 1 XR)
 Class 403 : JOINTS AND CONNECTIONS
 403/11 WITH ADJUNCTIVE PROTECTOR, BROKEN PARTS
 RETAINER, REPAIR, ASSEMBLY OR DISASSEMBLY FEATURE
 403/13 .Position or guide means
- 2 403/268 (1 OR, 1 XR)
 Class 403 : JOINTS AND CONNECTIONS
 403/265 MOLDED JOINT
 403/268 .Socket or open cup for bonding material
- 2 417/212 (0 OR, 2 XR)
 Class 417 : PUMPS
 417/212 CONDITION RESPONSIVE CONTROL OF DRIVE
 TRANSMISSION OR PUMP DISPLACEMENT
- 2 417/223 (0 OR, 2 XR)
 Class 417 : PUMPS
 417/212 CONDITION RESPONSIVE CONTROL OF DRIVE
 TRANSMISSION OR PUMP DISPLACEMENT
 417/223 .Disconnectable drive element (e.g., clutch,
 belt, shifter, etc.)
- 2 417/313 (0 OR, 2 XR)
 Class 417 : PUMPS
 417/313 COMBINED
- 2 417/36 (0 OR, 2 XR)
 Class 417 : PUMPS
 417/1 CONDITION RESPONSIVE CONTROL OF PUMP DRIVE
 MOTOR
 417/36 .Responsive to accumulation of pumped liquid in
 receiver
- 2 417/38 (0 OR, 2 XR)
 Class 417 : PUMPS
 417/1 CONDITION RESPONSIVE CONTROL OF PUMP DRIVE
 MOTOR
 417/36 .Responsive to accumulation of pumped liquid in
 receiver
 417/38 ..By liquid pressure sensor
- 2 417/392 (0 OR, 2 XR)
 Class 417 : PUMPS
 417/321 MOTOR DRIVEN
 417/375 .Fluid motor
 417/392 ..Common pumping and motor working member
- 2 417/394 (1 OR, 1 XR)
 Class 417 : PUMPS
 417/321 MOTOR DRIVEN
 417/375 .Fluid motor
 417/392 ..Common pumping and motor working member

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- 417/394 ...Collapsible common member
- 2 417/400 (1 OR, 1 XR)
 Class 417 : PUMPS
 417/321 MOTOR DRIVEN
 417/375 .Fluid motor
 417/398 ..Rectilinearly reciprocating cylinder and
 piston-type motor
 417/399 ...Rectilinearly reciprocating cylinder and
 piston-type pump
 417/400 Interconnected moving cylinder and piston
- 2 417/402 (0 OR, 2 XR)
 Class 417 : PUMPS
 417/321 MOTOR DRIVEN
 417/375 .Fluid motor
 417/398 ..Rectilinearly reciprocating cylinder and
 piston-type motor
 417/399 ...Rectilinearly reciprocating cylinder and
 piston-type pump
 417/401 Integral pump and motor pistons
 417/402 Constantly applied force in education
 stroke direction
- 2 417/404 (1 OR, 1 XR)
 Class 417 : PUMPS
 417/321 MOTOR DRIVEN
 417/375 .Fluid motor
 417/398 ..Rectilinearly reciprocating cylinder and
 piston-type motor
 417/399 ...Rectilinearly reciprocating cylinder and
 piston-type pump
 417/401 Integral pump and motor pistons
 417/403 Double acting motor piston
 417/404 Double acting pump piston
- 2 417/410.1 (1 OR, 1 XR)
 Class 417 : PUMPS
 417/321 MOTOR DRIVEN
 417/410.1 .Electric or magnetic motor
- 2 417/415 (0 OR, 2 XR)
 Class 417 : PUMPS
 417/321 MOTOR DRIVEN
 417/410.1 .Electric or magnetic motor
 417/415 ..Reciprocating rigid pumping member
- 2 417/42 (2 OR, 0 XR)
 Class 417 : PUMPS
 417/1 CONDITION RESPONSIVE CONTROL OF PUMP DRIVE
 MOTOR
 417/42 .In response to pump speed
- 2 417/430 (0 OR, 2 XR)
 Class 417 : PUMPS
 417/430 INCLUDING MEANS TO (1) AGITATE PUMP FLUID, OR
 (2) PREVENT FOREIGN MATERIAL SETTLING FROM PUMP FLUID

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- 2 417/431 (0 OR, 2 XR)
 Class 417 : PUMPS
 417/430 INCLUDING MEANS TO (1) AGITATE PUMP FLUID, OR
 (2) PREVENT FOREIGN MATERIAL SETTLING FROM PUMP FLUID
 417/431 .By application of separate fluid
- 2 417/44.11 (0 OR, 2 XR)
 Class 417 : PUMPS
 417/1 CONDITION RESPONSIVE CONTROL OF PUMP DRIVE
 MOTOR
 417/44.1 .By control of electric or magnetic drive motor
 417/44.11 ..Responsive to change in electrical operating
 characteristic
- 2 417/454 (2 OR, 0 XR)
 Class 417 : PUMPS
 417/437 EXPANSIBLE CHAMBER TYPE
 417/454 .Including valve assembly, disassembly, or
 inspection facilitating means
- 2 417/46 (2 OR, 0 XR)
 Class 417 : PUMPS
 417/1 CONDITION RESPONSIVE CONTROL OF PUMP DRIVE
 MOTOR
 417/46 .By controlling drive motor motive fluid
- 2 417/478 (0 OR, 2 XR)
 Class 417 : PUMPS
 417/437 EXPANSIBLE CHAMBER TYPE
 417/478 .Inlet and discharge distributors at opposite
 ends of tubular flexible wall pumping chamber
- 2 417/520 (0 OR, 2 XR)
 Class 417 : PUMPS
 417/437 EXPANSIBLE CHAMBER TYPE
 417/510 .Mechanically actuated distributor
 417/520 ..Distributor abutted by or frictionally
 engaged with pumping member
- 2 417/552 (0 OR, 2 XR)
 Class 417 : PUMPS
 417/437 EXPANSIBLE CHAMBER TYPE
 417/545 .Valved piston
 417/552 ..Reciprocating
- 2 417/555.2 (0 OR, 2 XR)
 Class 417 : PUMPS
 417/437 EXPANSIBLE CHAMBER TYPE
 417/555.1 .Fluid serially moved to opposite side of
 pumping member
 417/555.2 ..Well swabs
- 2 417/567 (0 OR, 2 XR)
 Class 417 : PUMPS
 417/437 EXPANSIBLE CHAMBER TYPE
 417/559 .Having pumping chamber pressure responsive
 distributor
 417/567 ..Inlet and discharge distributors in coaxial

10630158_CLSTITLES

ports

- 2 417/569 (0 OR, 2 XR)
Class 417 : PUMPS
417/437 EXPANSIBLE CHAMBER TYPE
417/559 .Having pumping chamber pressure responsive distributor
417/569 ..Distributor positioned opposite pumping member end face
- 2 418/48 (1 OR, 1 XR)
Class 418 : ROTARY EXPANSIBLE CHAMBER DEVICES
418/48 UNLIKE HELICAL SURFACES ON RELATIVELY WOBBLING ROTATING MEMBER AND ENCOMPASSING CYLINDER (E.G., MOINEAU TYPE)
- 2 507/205 (1 OR, 1 XR)
Class 507 : EARTH BORING, WELL TREATING, AND OIL FIELD CHEMISTRY
507/200 WELL TREATING
507/203 .Contains organic component
507/205 ..Organic component contains fluorine bonded directly to carbon

10630158_EAST

(4406597
4456060
4483662
4526048
4545737
4346620
4354395
5509475
4390321
4501119
4461187
5441389
4445674
5735170
4176714
4354397
4375946
4571162
4963078
5018350
5230607
5281109
5309992
5409356
5549156
6446946
6481987
5567138
5586602
6015010
4631954
4571939
4997037
4414808
5826862
5062616
5857665
5362206
4490095
4540348
4565496
4935685
5423224
4406561
4500224
4538339
4570718
5224834
5246076
5620048).pn.
(4269082
4273520
4284943
4400141
4490094
4949784
4993448
5209495
5275540

10630158_EAST

5382142
5472326
5593289
5678981
5771968
5934303
6105671
6182751
4286928
4392792
4401396
4406122
4512149
4546607
4552220
4572012
4781543
4781547
4788873
4790376
4876018
RE33163
4919560
5006044
5222867
5284422
5404767
5406482
5407333
5511619
5589633
5782608
5819849
5820350
5831353
5868029
5941305
RE36362
6041856
6152223
3706234) .pn.
(3697199
3643432
3635081
3912420
3889579
3802802
4047384
4049365
4157117
4171185
4099571
4114375
4243361
4257751
4262742
4267888
4285401
4286656

10630158_EAST

4289294
4296678
4297088
4297087
4299545
4305461
4306463
RE31016
4315699
4320799
4329124
4350080
4350478
4353445
4355307
4360320
4362478
4366861
4368909
4373873
4380150
4383803
4390326
4393927
4395204
4401159
4403884
4403919
4411546
4416329
4418609
4431052) .pn.